

RD-28679-1

Application No. 10/064,129
 Amendment dated July 5, 2005
 Reply to Office Action of April 6, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

- 1-6. (cancelled)
7. (original) The phosphor blend of claim 1, wherein y is in a range from about 4.5 to and including 5.
8. (original) The phosphor blend of claim 1, wherein y is in a range from about 4.6 to and including 5.
9. (previously presented) A phosphor blend comprising $(Tb, Y, Lu, La, Gd)_x(Al, Ga)_yO_{12}:Ce^{3+}$, wherein x is in a range from about 2.8 to and including 3 and y is a range from about 4 to and including 5, and at least another phosphor selected from one of groups: (a) $(Ba, Sr, Ca)_3(PO_4)_3(Cl, F, OH):Eu^{2+}$, $(Ba, Sr, Ca)MgAl_{10}O_{17}:Eu^{2+}$, and $(Ba, Sr, Ca)BPO_5:Eu^{2+}$; (b) $Sr_4Al_{14}O_{25}:Lu^{2+}$, $BaAl_3O_{13}:Eu^{2+}$, $2SrO \cdot 0.84P_2O_5 \cdot 0.16B_2O_3:Fu^{2+}$, $MgWO_4$, $BaTiP_2O_8$, and $(Ba, Sr, Ca)_3(PO_4)_3(Cl, F, OH):Sb^{3+}$; (c) $LaPO_4:Ce^{3+}$, Tb^{3+} , $CeMgAl_{11}O_{19}:Tb^{3+}$, $GdMgB_5O_{10}:Ce^{3+}$, Th^{3+} , Mn^{2+} , and $GdMgB_5O_{10}:Ce^{3+}$, Tb^{3+} ; (d) $(Gd, La, Lu, Sc)_2O_3:Eu^{3+}$, $(Y, Gd, La, In, Lu, Sc)BO_3:Eu^{3+}$, $(Y, Gd, La)(Al, Ga)_2O_3:Eu^{3+}$, $(Ba, Sr, Ca)(Y, Gd, La, Lu)_2O_4:Eu^{3+}$, $(Y, Gd)Al_3B_4O_{12}:Eu^{3+}$, monoclinic $Gd_2O_3:Fu^{3+}$, $(Gd, Y)_4(Al, Ga)_2O_9:Eu^{3+}$, $(Ca, Sr)(Gd, Y)_3(Ge, Si)Al_3O_9:Eu^{3+}$, $(Sr, Mg)_3(PO_4)_2:Sm^{2+}$, and $GdMgB_5O_{10}:Ce^{3+}, Mn^{2+}$; and (e) $3.5MgO \cdot 0.5MgF_2 \cdot GeO_2:Mn^{4+}$; wherein said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.
10. (previously presented) A phosphor blend comprising $(Tb, Y, Lu, La, Gd)_x(Al, Ga)_yO_{12}:Ce^{3+}$, wherein x is in a range from about 2.8 to and

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including 3 and y is a range from about 4 to and including 5, and at least another phosphor selected from one of groups. (a) $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}) : \text{Lu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17} : \text{Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_5 : \text{Lu}^{3+}$; (b) $\text{Sr}_4\text{Al}_{14}\text{O}_{25} : \text{Eu}^{2+}$, $\text{BaAl}_2\text{O}_7 : \text{Eu}^{2+}$, $2\text{SrO} \cdot 0.84\text{P}_2\text{O}_5 \cdot 0.16\text{B}_2\text{O}_3 : \text{Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17} : \text{Eu}^{2+}$, Mn^{2+} , and $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}) : \text{Sb}^{3+}$; (c) $\text{LaPO}_4 : \text{Ce}^{3+}$, Tb^{3+} , $\text{CeMgAl}_{11}\text{O}_{19} : \text{Tb}^{3+}$, $\text{GdMgH}_3\text{O}_{10} : \text{Ce}^{3+}$, Tb^{3+} , Mn^{2+} , and $\text{GdMgB}_5\text{O}_{10} : \text{Ce}^{3+}$, Tb^{3+} ; (d) $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3 : \text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{In}, \text{Lu}, \text{Sc})\text{BO}_3 : \text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})(\text{Al}, \text{Ga})\text{O}_3 : \text{Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{La}, \text{Lu})_2\text{O}_4 : \text{Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{B}_4\text{O}_{12} : \text{Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3 : \text{Eu}^{3+}$, $(\text{Gd}, \text{Y})_4(\text{Al}, \text{Ga})_2\text{O}_9 : \text{Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_3\text{O}_9 : \text{Eu}^{3+}$, $(\text{Sr}, \text{Mg})_3(\text{PO}_4)_2 : \text{Sn}^{3+}$, and $\text{GdMgB}_5\text{O}_{10} : \text{Ce}^{3+}, \text{Mn}^{2+}$; and (e) $3.5\text{MgO} \cdot 0.5\text{Mg}^{1/2} \cdot \text{GeO}_2 : \text{Mn}^{4+}$; wherein said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum, wherein said phosphor blend absorbs EM radiation substantially in a wavelength range from about 250 nm to about 350 nm.

11. (previously presented) The phosphor blend of claim 10, wherein said phosphor blend absorbs EM radiation substantially in a wavelength range from about 250 nm to about 300 nm.

12. (original) The phosphor blend of claim 11, wherein said white light has color coordinates substantially on a black body locus of a CIE chromaticity diagram.

13. (original) The phosphor blend of claim 11, wherein said color coordinates of said white light is represented by a point at a distance less than or equal to about 0.0054 from a black body locus of a CIE chromaticity diagram.

14. (original) The phosphor blend of claim 9, wherein said light emitted from said phosphor blend is white light.

15. (original) The phosphor blend of claim 9, wherein y is in a range from about 4.5 to and including 5.

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16. (original) The phosphor blend of claim 9, wherein y is in a range from about 4.6 to and including 5.

17. (currently amended) A phosphor blend comprising a plurality of phosphors, each of said phosphors being selected from one of groups: (a) $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{F})\text{:Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_5\text{:Eu}^{2+}$; (b) $\text{Sr}_4\text{Al}_{14}\text{O}_{25}\text{:Eu}^{2+}$, $\text{BaAl}_8\text{O}_{13}\text{:Eu}^{2+}$, $2\text{SrO}\cdot 0.84\text{P}_2\text{O}_5\cdot 0.16\text{B}_2\text{O}_3\text{:Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , and $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})\text{:Sb}^{3+}$; (c) $(\text{Th}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_x(\text{Al}, \text{Ga})_y\text{O}_{17}\text{:Ce}^{3+}$, wherein x is a range from about 2.8 to and including 3 and y is in a range from about 4 to and including 5, and $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})\text{:Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; and (d) $(\text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})\text{BO}_3\text{:Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})(\text{Al}, \text{Ga})\text{O}_3\text{:Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{Lu}, \text{La})_2\text{O}_4\text{:Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{B}_4\text{O}_{12}\text{:Tm}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3\text{:Er}^{3+}$, $(\text{Gd}, \text{Y})_x(\text{Al}, \text{Ga})_y\text{O}_9\text{:Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_3\text{O}_7\text{:Eu}^{3+}$, $(\text{Sr}, \text{Mg})_3(\text{PO}_4)_2\text{:Sn}^{2+}$, and $\text{GdMgP}_5\text{O}_{10}\text{:Ce}^{3+}, \text{Mn}^{2+}$; wherein y is in a range from about 4.5 to and including 5, at least two of said phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

18. (cancelled)

19. (original) The phosphor blend of claim 17, wherein y is in a range from about 4.6 to and including 5.

20. (previously presented) A phosphor blend comprising phosphors, each of said phosphors being selected from one of the groups: (a) $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{F})\text{:Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_5\text{:Eu}^{2+}$; (b) $\text{Sr}_4\text{Al}_{14}\text{O}_{25}\text{:Eu}^{2+}$, $\text{BaAl}_8\text{O}_{13}\text{:Eu}^{2+}$, $2\text{SrO}\cdot 0.84\text{P}_2\text{O}_5\cdot 0.16\text{B}_2\text{O}_3\text{:Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , and $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})\text{:Sb}^{3+}$; and (c) $(\text{Th}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_x(\text{Al}, \text{Ga})_y\text{O}_{17}\text{:Ce}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})\text{:Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM

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radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

21. (original) The phosphor blend of claim 20, wherein y is in a range from about 4.5 to and including 5.

22. (original) The phosphor blend of claim 20, wherein y is in a range from about 4.6 to and including 5.

23. (cancelled)

24. (previously presented) A phosphor blend comprising phosphors each of said phosphors being selected from one of groups: (a) $(\text{Ba,Sr,Ca})_5(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\text{:Eu}^{2+}$; (b) $\text{LaPO}_4\text{:Ce}^{3+}$, Tb^{3+} , $\text{CeMgAl}_{11}\text{O}_{19}\text{:Tb}^{3+}$, $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Tb^{3+} , Mn^{2+} , and $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Tb^{3+} ; (c) $(\text{Th,Y,Lu,Lu,Gd})_x(\text{Al,Ga})_y\text{O}_{12}\text{:Ce}^{3+}$ and $(\text{Ba,Sr,Ca})_5(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Fm}^{2+}$, Mn^{2+} , Sb^{3+} ; and (d) $(\text{Y,Gd,Lu,Lu,Sc})_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu,Lu,Sc})\text{BO}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu})(\text{Al,Ga})\text{O}_3\text{:Eu}^{3+}$, $(\text{Ba,Sr,Ca})(\text{Y,Gd,Lu,Lu})_2\text{O}_4\text{:Eu}^{3+}$, $(\text{Y,Gd})\text{Al}_3\text{B}_4\text{O}_{12}\text{:Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Gd,Y})_4(\text{Al,Ga})_2\text{O}_9\text{:Eu}^{3+}$, $(\text{Ca,Sr})(\text{Gd,Y})_3(\text{Ge,Si})\text{Al}_3\text{O}_9\text{:Eu}^{3+}$, and $(\text{Sr,Mg})_2(\text{PO}_4)_2\text{:Sn}^{2+}$, $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Mn^{2+} ; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing LIM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light having wavelengths in a visible spectrum.

25. (previously presented) The phosphor blend of claim 24, wherein y is in a range from about 4.6 to and including 5.

26. (previously presented) A phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (a) $(\text{Ba,Sr,Ca})_5(\text{PO}_4)_3(\text{F})\text{:Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{RPO}_5\text{:Lu}^{2+}$; (b)

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$(\text{Tb}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_x(\text{Al}, \text{Ga})_y\text{O}_{12}:\text{Ce}^{3+}$ and $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; and (c) $(\text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{In}, \text{Lu}, \text{Sc})\text{BO}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})(\text{Al}, \text{Ga})\text{O}_3:\text{Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{La}, \text{Lu})_2\text{O}_4:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{B}_4\text{O}_{12}:\text{Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Gd}, \text{Y})_4(\text{Al}, \text{Ga})_2\text{O}_9:\text{Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_3\text{O}_9:\text{Eu}^{3+}$, and $(\text{Sr}, \text{Mg})_3(\text{PO}_4)_2:\text{Sn}^{2+}$, $\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Mn}^{2+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

27. (previously presented) A phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (a) $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{F}):\text{Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_4:\text{Eu}^{2+}$; (b) $(\text{Tb}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_x(\text{Al}, \text{Ga})_y\text{O}_{12}:\text{Ce}^{3+}$ and $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; (c) $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{In}, \text{Lu}, \text{Sc})\text{BO}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})(\text{Al}, \text{Ga})\text{O}_3:\text{Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{La}, \text{Lu})_2\text{O}_4:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{B}_4\text{O}_{12}:\text{Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Gd}, \text{Y})_4(\text{Al}, \text{Ga})_2\text{O}_9:\text{Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_3\text{O}_9:\text{Eu}^{3+}$, and $(\text{Sr}, \text{Mg})_3(\text{PO}_4)_2:\text{Sn}^{2+}$, $\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Mn}^{2+}$; and (d) $3.5\text{MgO} \cdot 0.5\text{MgF}_2 \cdot \text{GeO}_2:\text{Mn}^{4+}$ wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

28. (previously presented) The phosphor blend of claim 27, wherein y is in a range from about 4.6 to and including 5.

29. (previously presented) A phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (a) $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{F}):\text{Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_4:\text{Eu}^{2+}$; and (b) $(\text{Tb}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_x(\text{Al}, \text{Ga})_y\text{O}_{12}:\text{Ce}^{3+}$ and $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to

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and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

30. (previously presented) A phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (a) $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\cdot\text{Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\cdot\text{Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\cdot\text{Eu}^{2+}$; (b) $(\text{Tb,Y,Lu,La,Gd})_x(\text{Al,Ga})_y\text{O}_{12}\cdot\text{Ce}^{3+}$ and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\cdot\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; and (c) $3.5\text{MgO}\cdot 0.5\text{MgF}_2\cdot x\text{GeO}_2\cdot \text{Mn}^{4+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

31. (previously presented) The phosphor blend of claim 30, wherein y is in a range from about 4.6 to and including 5.

32. (cancelled)

33. A light source comprising:

(a) a source of gas discharge; and

(b) a phosphor blend comprising at least two phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\cdot\text{Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\cdot\text{Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\cdot\text{Eu}^{2+}$; (2) $\text{Sr}_4\text{Al}_{14}\text{O}_{75}\cdot\text{Eu}^{2+}$, $\text{BaAl}_8\text{O}_{13}\cdot\text{Eu}^{2+}$, $2\text{SrO}\cdot 0.84\text{P}_2\text{O}_5\cdot 0.16\text{B}_2\text{O}_3\cdot\text{Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\cdot\text{Eu}^{2+}$, Mn^{2+} , and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\cdot\text{Sb}^{3+}$; (3) $\text{LaPO}_4\cdot\text{Ce}^{3+}, \text{Th}^{3+}$, $\text{CeMgAl}_{11}\text{O}_{19}\cdot\text{Tb}^{3+}$, $\text{GdMgB}_5\text{O}_{10}\cdot\text{Ce}^{3+}, \text{Tb}^{3+}, \text{Mn}^{2+}$, and $\text{GdMgB}_5\text{O}_{10}\cdot\text{Ce}^{3+}, \text{Tb}^{3+}$; (4) $(\text{Tb,Y,Lu,La,Gd})_x(\text{Al,Ga})_y\text{O}_{12}\cdot\text{Ce}^{3+}$ and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\cdot\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; (5) $(\text{Y,Gd,La,Lu,Sc})_2\text{O}_3\cdot\text{Eu}^{3+}$,

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$(Y,Gd,Lu,La,Sc)BO_3:Eu^{3+}$, $(Y,Gd,La)(Al,Ga)O_3:Eu^{3+}$,
 $(Ba,Sr,Ca)(Y,Gd,La,Lu)_2O_4:Eu^{3+}$, $(Y,Gd)Al_3B_4O_{12}:Eu^{3+}$, monoclinic $Gd_2O_3:Eu^{3+}$,
 $(Gd,Y)_4(Al,Ga)_2O_9:Eu^{3+}$, $(Ca,Sr)(Gd,Y)_3(Ge,Si)Al_5O_9:Eu^{3+}$, $(Sr,Mg)_3(PO_4)_2:Sn^{2+}$, and
 $GdMgB_5O_{10}:Ce^{3+}, Mn^{2+}$; and (6) $3.5MgO \cdot 0.5MgF_2 \cdot GeO_2:Mn^{4+}$; wherein x is in a range
 from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least
 two phosphors are selected from different groups, and said phosphor blend is capable of
 absorbing EM radiation that is emitted by said source of gas discharge and has
 wavelengths in a range from about 200 nm to about 400 nm and emitting light in having
 wavelengths in a visible spectrum.

31. (previously presented) The light source of claim 33, wherein y is in
 a range from about 4.6 to and including 5.

35. (cancelled)

36. (original) A light source comprising:

(a) a source of gas discharge; and

(b) a phosphor blend comprising

$(Th,Y,Lu,La,Gd)_x(Al,Ga)_yO_{12}:Ce^{3+}$ and at least another phosphor selected from one of the
 groups: (1) $(Ba,Sr,Ca)_5(PO_4)_3(Cl,F,OH):Eu^{2+}$, $(Ba,Sr,Ca)MgAl_{10}O_{17}:Eu^{2+}$, and
 $(Ba,Sr,Ca)Bi^*O_5:Eu^{2+}$; (2) $Sr_4Al_{14}O_{25}:Eu^{2+}$, $BaAl_9O_{13}:Eu^{2+}$,
 $2SrO \cdot 0.84P_2O_5 \cdot 0.16B_2O_3:Eu^{2+}$, $MgWO_4$, $BaTi_2P_2O_8$, $(Ba,Sr,Ca)MgAl_{10}O_{17}:Eu^{2+}, Mn^{2+}$,
 and $(Ba,Sr,Ca)_5(PO_4)_3(Cl,F,OH):Sb^{3+}$; (3) $LaPO_4:Ce^{3+}, Tb^{3+}, CeMgAl_{11}O_{10}:Th^{3+}$,
 $GdMgB_5O_{10}:Ce^{3+}, Th^{3+}, Mn^{2+}$, and $GdMgB_5O_{10}:Ce^{3+}, Tb^{3+}$; (4)
 $(Y,Gd,La,Lu,Sc)_2O_3:Fu^{3+}$, $(Y,Gd,La,In,Lu,Sc)BO_3:Eu^{3+}$, $(Y,Gd,La)(Al,Ga)O_3:Eu^{3+}$,
 $(Ba,Sr,Ca)(Y,Gd,La,Lu)_2O_4:Eu^{3+}$, $(Y,Gd)Al_3B_4O_{12}:Eu^{3+}$, monoclinic $Gd_2O_3:Eu^{3+}$,
 $(Gd,Y)_4(Al,Ga)_2O_9:Eu^{3+}$, $(Ca,Sr)(Gd,Y)_3(Ge,Si)Al_5O_9:Eu^{3+}$, $(Sr,Mg)_3(PO_4)_2:Sn^{2+}$, and
 $GdMgB_5O_{10}:Ce^{3+}, Mn^{2+}$; and (5) $3.5MgO \cdot 0.5MgF_2 \cdot GeO_2:Mn^{4+}$; wherein x is in a range
 from about 2.8 to and including 3, y is in a range from about 4 to and including 5, said
 phosphor blend is capable of absorbing EM radiation that is emitted by said source of gas

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discharge and has wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

37. (original) The light source of claim 36, wherein y is in a range from about 4.5 to and including 5.

38. (original) The light source of claim 36, wherein y is in a range from about 4.6 to and including 5.

39. (original) The light source of claim 36, wherein said source of gas discharge is a mercury vapor discharge.

40. (cancelled)

41. (previously presented) A light source comprising:

(a) a source of gas discharge; and

(b) a phosphor blend comprising a plurality of phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})_2:\text{Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_5:\text{Eu}^{2+}$; (2) $\text{Sr}_2\text{Al}_4\text{O}_{25}:\text{Eu}^{2+}$, $\text{BaAl}_8\text{O}_{13}:\text{Eu}^{2+}$, $2\text{SrO} \cdot 0.84\text{P}_2\text{O}_5 \cdot 0.16\text{B}_2\text{O}_3:\text{Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$, Mn^{2+} , and $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})_2:\text{Sb}^{3+}$; (3) $(\text{Th}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_2(\text{Al}, \text{Ga})_2\text{O}_{12}:\text{Ce}^{3+}$ and $(\text{Ba}, \text{Sr}, \text{Ca})_5(\text{PO}_4)_3(\text{Cl}, \text{F}, \text{OH})_2:\text{Eu}^{2+}$, Mn^{2+} , Sb^{3+} ; and (4) $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{In}, \text{Lu}, \text{Sc})\text{BO}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})(\text{Al}, \text{Ga})\text{O}_3:\text{Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{La}, \text{Lu})_2\text{O}_4:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{R}_4\text{O}_{12}:\text{Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Gd}, \text{Y})_4(\text{Al}, \text{Ga})_2\text{O}_9:\text{Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_5\text{O}_9:\text{Eu}^{3+}$, $(\text{Sr}, \text{Mg})_5(\text{PO}_4)_2:\text{Si}^{2+}$, and $\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Mn}^{2+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two of said phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

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42. (previously presented) The light source of claim 41, wherein y is in a range from about 4.6 to and including 5.

43. (cancelled)

44. (previously presented) A light source comprising:

(a) a source of gas discharge; and

(b) a phosphor blend comprising a plurality of phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\text{:Eu}^{2+}$; (2) $\text{Sr}_4\text{Al}_{14}\text{O}_{25}\text{:Eu}^{2+}$, $\text{BaAl}_3\text{O}_{13}\text{:Eu}^{2+}$, $2\text{SrO}\cdot 0.84\text{P}_2\text{O}_5\cdot 0.16\text{B}_2\text{O}_3\text{:Eu}^{2+}$, MgWO_4 , BaTiP_2O_8 , $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, Mn^{2+} , and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Sb}^{3+}$; and (3) $(\text{Tb,Y,Lu,La,Cd})_x(\text{Al,Ga})_y\text{O}_{12}\text{:Ce}^{3+}$ and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, Mn^{2+} , Sb^{3+} ; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light having wavelengths in a visible spectrum.

45. (original) The light source of claim 44, wherein y is in a range from about 4.5 to and including 5.

46. (original) The light source of claim 44, wherein y is in a range from about 4.6 to and including 5.

47. (original) The light source of claim 44, wherein said source of gas discharge is a mercury vapor discharge.

48. (cancelled)

49. (previously presented) A light source comprising:

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- (a) a source of gas discharge; and
- (b) a phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\text{:Eu}^{2+}$; (2) $\text{LaPO}_4\text{:Ce}^{3+}$, Tb^{3+} , $\text{CeMgAl}_{11}\text{O}_{19}\text{:Tb}^{3+}$, $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Tb^{3+} , Mn^{2+} , and $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Tb^{3+} ; (3) $(\text{Tb,Y,Lu,Lu,Gd})_x(\text{Al,Ga})_y\text{O}_{12}\text{:Ce}^{3+}$, $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, Mn^{2+} , Sb^{3+} ; and (4) $(\text{Y,Gd,Lu,Lu,Sc})_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu,Lu,Sc})\text{BO}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu})(\text{Al,Ga})\text{O}_3\text{:Lu}^{3+}$, $(\text{Ba,Sr,Ca})(\text{Y,Gd,Lu,Lu})_2\text{O}_4\text{:Eu}^{3+}$, $(\text{Y,Gd})\text{Al}_3\text{B}_4\text{O}_{12}\text{:Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Gd,Y})_2(\text{Al,Ga})_2\text{O}_9\text{:Eu}^{3+}$, $(\text{Ca,Sr})(\text{Gd,Y})_3(\text{Ge,Si})\text{Al}_3\text{O}_9\text{:Eu}^{3+}$, $(\text{Sr,Mg})_3(\text{PO}_4)_2\text{:Sn}^{2+}$, and $\text{GdMgB}_5\text{O}_{10}\text{:Ce}^{3+}$, Mn^{2+} ; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum

50. (previously presented) The light source of claim 49, wherein y is in a range from about 4.6 to and including 5.

51. (cancelled)

52. (currently amended) A light source comprising:

- (a) a source of gas discharge; and
- (b) phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{F,OH})\text{:Eu}^{2+}$, $(\text{Ba,Sr,Ca})\text{MgAl}_{10}\text{O}_{17}\text{:Eu}^{2+}$, and $(\text{Ba,Sr,Ca})\text{BPO}_5\text{:Eu}^{2+}$; (2) $(\text{Tb,Y,Lu,Lu,Gd})_x(\text{Al,Ga})_y\text{O}_{12}\text{:Ce}^{3+}$ and $(\text{Ba,Sr,Ca})_3(\text{PO}_4)_3(\text{Cl,F,OH})\text{:Eu}^{2+}$, Mn^{2+} , Sb^{3+} ; (3) $(\text{Gd,Lu,Lu,Sc})_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu,Lu,Sc})\text{BO}_3\text{:Eu}^{3+}$, $(\text{Y,Gd,Lu})(\text{Al,Ga})\text{O}_3\text{:Eu}^{3+}$, $(\text{Ba,Sr,Ca})(\text{Y,Gd,Lu,Lu})_2\text{O}_4\text{:Eu}^{3+}$, $(\text{Y,Gd})\text{Al}_3\text{B}_4\text{O}_{12}\text{:Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3\text{:Eu}^{3+}$, $(\text{Gd,Y})_2(\text{Al,Ga})_2\text{O}_9\text{:Eu}^{3+}$, $(\text{Ca,Sr})(\text{Gd,Y})_3(\text{Ge,Si})\text{Al}_3\text{O}_9\text{:Eu}^{3+}$, $(\text{Sr,Mg})_3(\text{PO}_4)_2\text{:Sn}^{2+}$, and

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$\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Mn}^{2+}$; and $(x) 3.5\text{MgO} \cdot 0.5\text{Mg}^{1/2} \cdot \text{GeO}_2:\text{Mn}^{2+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

53. (previously presented) A light source comprising:

(a) a source of gas discharge; and

(b) phosphor blend comprising phosphors, each of said phosphors being selected from one of groups: (1) $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_2(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}$, $(\text{Ba}, \text{Sr}, \text{Ca})\text{MgAl}_{10}\text{O}_{17}:\text{Eu}^{2+}$, and $(\text{Ba}, \text{Sr}, \text{Ca})\text{BPO}_3:\text{Eu}^{2+}$; (2) $(\text{Yb}, \text{Y}, \text{Lu}, \text{La}, \text{Gd})_2(\text{Al}, \text{Ga})_2\text{O}_7:\text{Ce}^{3+}$ and $(\text{Ba}, \text{Sr}, \text{Ca})_3(\text{PO}_4)_2(\text{Cl}, \text{F}, \text{OH}):\text{Eu}^{2+}, \text{Mn}^{2+}, \text{Sb}^{3+}$; (3) $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La}, \text{Lu}, \text{Sc})\text{BO}_3:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd}, \text{La})_2(\text{Al}, \text{Ga})_2\text{O}_7:\text{Eu}^{3+}$, $(\text{Ba}, \text{Sr}, \text{Ca})(\text{Y}, \text{Gd}, \text{La}, \text{Lu})_2\text{O}_4:\text{Eu}^{3+}$, $(\text{Y}, \text{Gd})\text{Al}_3\text{BaO}_{12}:\text{Eu}^{3+}$, monoclinic $\text{Gd}_2\text{O}_3:\text{Eu}^{3+}$, $(\text{Gd}, \text{Y})_4(\text{Al}, \text{Ga})_2\text{O}_9:\text{Eu}^{3+}$, $(\text{Ca}, \text{Sr})(\text{Gd}, \text{Y})_3(\text{Ge}, \text{Si})\text{Al}_3\text{O}_9:\text{Eu}^{3+}$, $(\text{Sr}, \text{Mg})_2(\text{PO}_4)_2:\text{Sn}^{2+}$, and $\text{GdMgB}_5\text{O}_{10}:\text{Ce}^{3+}, \text{Mn}^{2+}$; and (d) $3.5\text{MgO} \cdot 0.5\text{Mg}^{1/2} \cdot \text{GeO}_2:\text{Mn}^{2+}$; wherein x is in a range from about 2.8 to and including 3, y is in a range from about 4 to and including 5, at least two phosphors are selected from different groups, and said phosphor blend is capable of absorbing EM radiation having wavelengths in a range from about 200 nm to about 400 nm and emitting light in having wavelengths in a visible spectrum.

54. (previously presented) The light source of claim 53, wherein y is in a range from about 4.6 to and including 5.

55. (original) The light source of claim 52, wherein said source of gas discharge is a mercury vapor discharge.

56. (cancelled)

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57. (original) The light source according to claim 36, wherein said light source has a CRI greater than about 80.
58. (cancelled)
59. (original) The light source according to claim 44, wherein said light source has a CRI greater than about 80.
60. (original) The light source according to claim 49, wherein said light source has a CRI greater than about 80.
61. (original) The light source according to claim 52, wherein said light source has a CRI greater than about 80.
62. (cancelled)
63. (original) The light source according to claim 57, wherein said light source has a CRI greater than about 80 and a CCT in a range from about 2700 to about 6500 K.
64. (cancelled)
65. (original) The light source according to claim 59, wherein said light source has a CRI greater than about 80 and a CCT in a range from about 2700 to about 6500 K.
66. (original) The light source according to claim 60, wherein said light source has a CRI greater than about 80 and a CCT in a range from about 2700 to about 6500 K.
67. (original) The light source according to claim 61, wherein said light source has a CRI greater than about 80 and a CCT in a range from about 2700 to about 6500 K.